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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:)	Group Art Unit:	2631
)		
Tsang et al.)	Examiner:	Unknown
)		
Serial No.: 10/720,035)	Confirmation No.	2542
)		
Filed: 11/21/2003)	Attorney File No.:	35811-00001
)		

For: "NUCLEAR VOLTAIC CELL"

PETITION TO MAKE SPECIAL UNDER THE ENERGY PROGRAM
(37 C.F.R. § 1.102(c) and M.P.E.P. § 708.02, VI)

Mail Stop Petition
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING 37 § C.F.R. 1.8
I hereby certify that this document and any documents indicated as being enclosed therein are being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450

on: June 17, 2005

By: 
Name: Mary L. Sherwood

Dear Sir:

Applicant hereby petitions to make this application special as being for an invention that materially contributes to

- (A) ☒ The discovery or development of energy resources.
(B) ☐ The more efficient utilization and conservation of energy.

1. Accompanying Material

Accompanying this petition is a statement by:

- (A) ☐ Applicant.
(B) ☒ Applicant's attorney.


explaining how the invention materially contributes to category (A) or (B) set forth above.

2. Fee

In accordance with 37 C.F.R. § 1.102(c), no fee is required for this petition.

Respectfully submitted,

GIBSON, DUNN & CRUTCHER LLP


by: Stanley J. Gradisar, Reg. No. 42,598

Attorney/Agent for Applicant(s)

Customer No. 22334
Gibson, Dunn & Crutcher LLP
1801 California Street, Suite 4200
Denver, CO 80202-2641

Phone: (303) 298-5786
Fax: (303) 296-5310

Date: June 17, 2005

STATEMENT BY
STANLEY J. GRADISAR
ATTORNEY FOR APPLICANT
REG. NO. 42,598

Dear Sir:

Applicant's invention relates primarily to a method of and a device for generating electrical power directly from nuclear power, and more particularly to using liquid semiconductors as a means for efficiently converting nuclear energy, either nuclear fission and/or radiation energy, directly into electrical energy. The best-known method of generating electrical power using nuclear energy is via heat exchange processes, the method used in nuclear power plants to generate electricity. Nuclear power plants, in general, have energy conversion rates of between 30 and 40 percent. This efficiency rate is very good considering that several steps are used in such power plants to convert the nuclear energy to electrical energy by way of heating water to turn it to steam to drive a steam turbine. Consequently, nuclear power plants are a good source for large-scale generation of electricity. However, apparatus that use heat transfer techniques for generating electricity from nuclear energy are, in general, large and inefficient for small-scale power conversion.

Theoretically, the best methods for converting nuclear energy into electrical energy should be direct methods where the nuclear energy is directly changed into electrical energy without intermediate transfer steps. Direct conversion methods are potentially the most efficient conversion methods because they would avoid the inherent energy loss during each conversion process. However, to date no direct conversion methods have been demonstrated to be practically feasible.

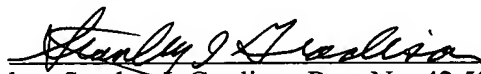
The present invention provides for a self-contained method and apparatus for converting nuclear power directly to electrical power that can generate large amounts of electrical power for long periods of time without the need for frequent refueling and requires little or no maintenance. The present invention provides a method and apparatus that meets the long felt need for a method of converting nuclear energy directly to electrical energy that is small in size, reliable, and can generate large amounts of electrical energy for use in submarines, surface ships, and as a battery to power a whole range of products – including, for example, military equipment, satellites, and space vehicles.

Each embodiment of the current invention relates to the use of a liquid semiconductor in conjunction with a radiation source: either fissile material such as uranium-235 or plutonium, or a radioactive isotope. Use of a liquid semiconductor minimizes the effects of radiation damage, because liquid semiconductors rapidly self-heal, and can be purified or "scrubbed" of fission fragments left from fission events.

Applicants invention has the potential to reduce the world's reliance upon fossil fuels for energy by making wider spread use of safe nuclear energy possible. Thus, Applicant's invention relates substantially to the discovery or development of energy resources according to the criteria established in M.P.E.P. § 708.02, VI under 37 C.F.R. § 1.102(c). Applicant respectfully requests that Applicant's Petition To Make Special in relation to Applicant's patent application be granted.

Respectfully submitted,

GIBSON, DUNN & CRUTCHER LLP



by: Stanley J. Gradisar, Reg. No. 42,598
Attorney/Agent for Applicant(s)

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Gibson, Dunn & Crutcher LLP
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